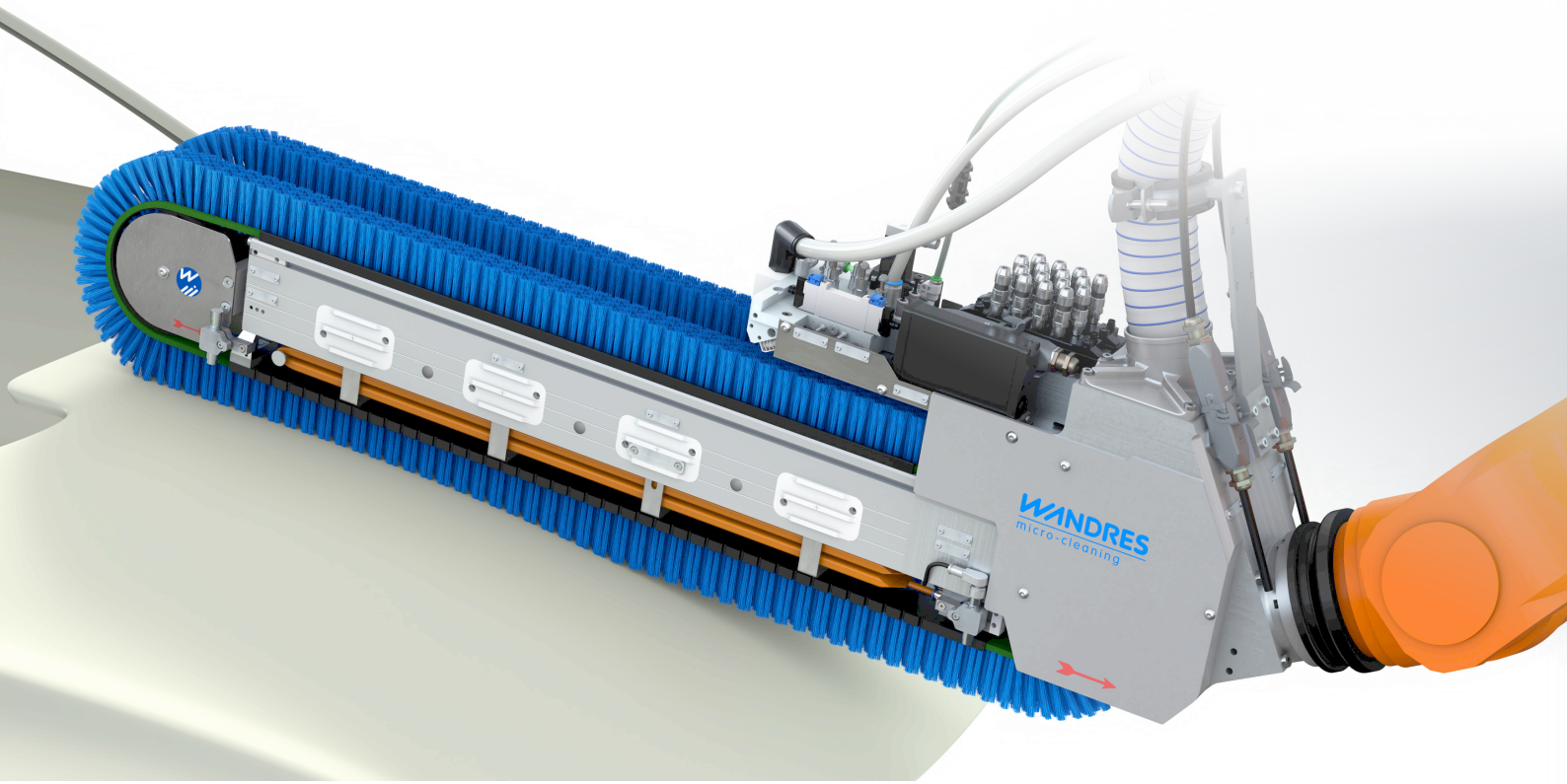
Robot Sword Brush Laura 160..

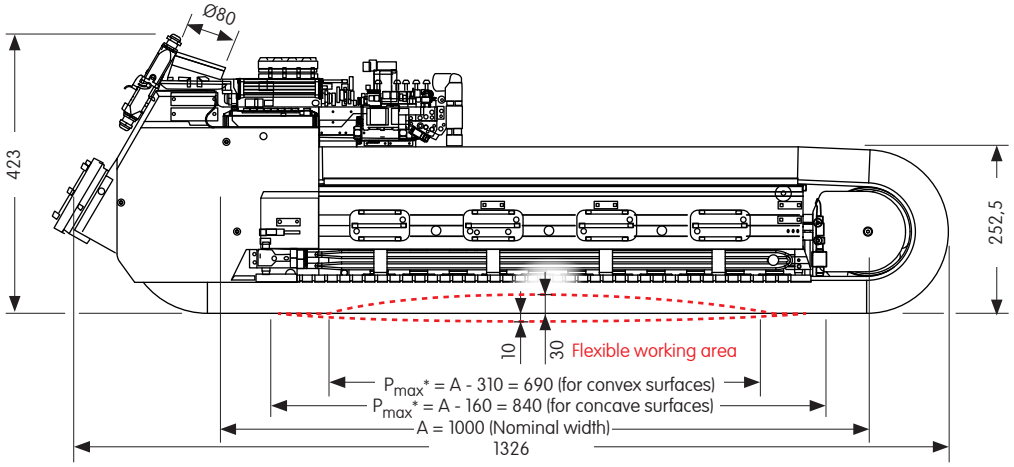


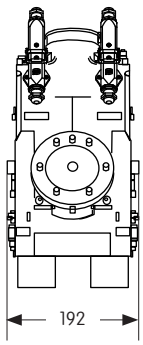
Brief description

The Robot Sword Brush Laura 160..cleans complex geometrical surfaces such as car bodies, support structures or plastic moulded parts prior to painting or coating. It features two parallel linear brushes that are mounted on a flexible contact area. They have micro-moistened filament tips that allow them to remove very fine dust particles without dampening the subject surface. Tornado nozzles of the Janus 50 D type use a jet of compressed air to remove particles from recesses. They are mounted between the two linear brushes. The combination of brushes and nozzles provides for an excellent cleaning result and allows fast cycle times.

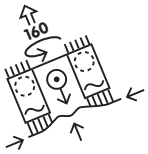
Technical details

- 2 x linear brush Quadro L with flexible pressure buffer that is controlled pneumatically
- Ingromat®-System
- 11 rotating Tornado nozzles Janus 50 D
- Proximity sensors, standstill monitor, flow meter
- Fieldbus system (e.g. Profinet)
- Compact hub drive
- Robot flange with quick change system



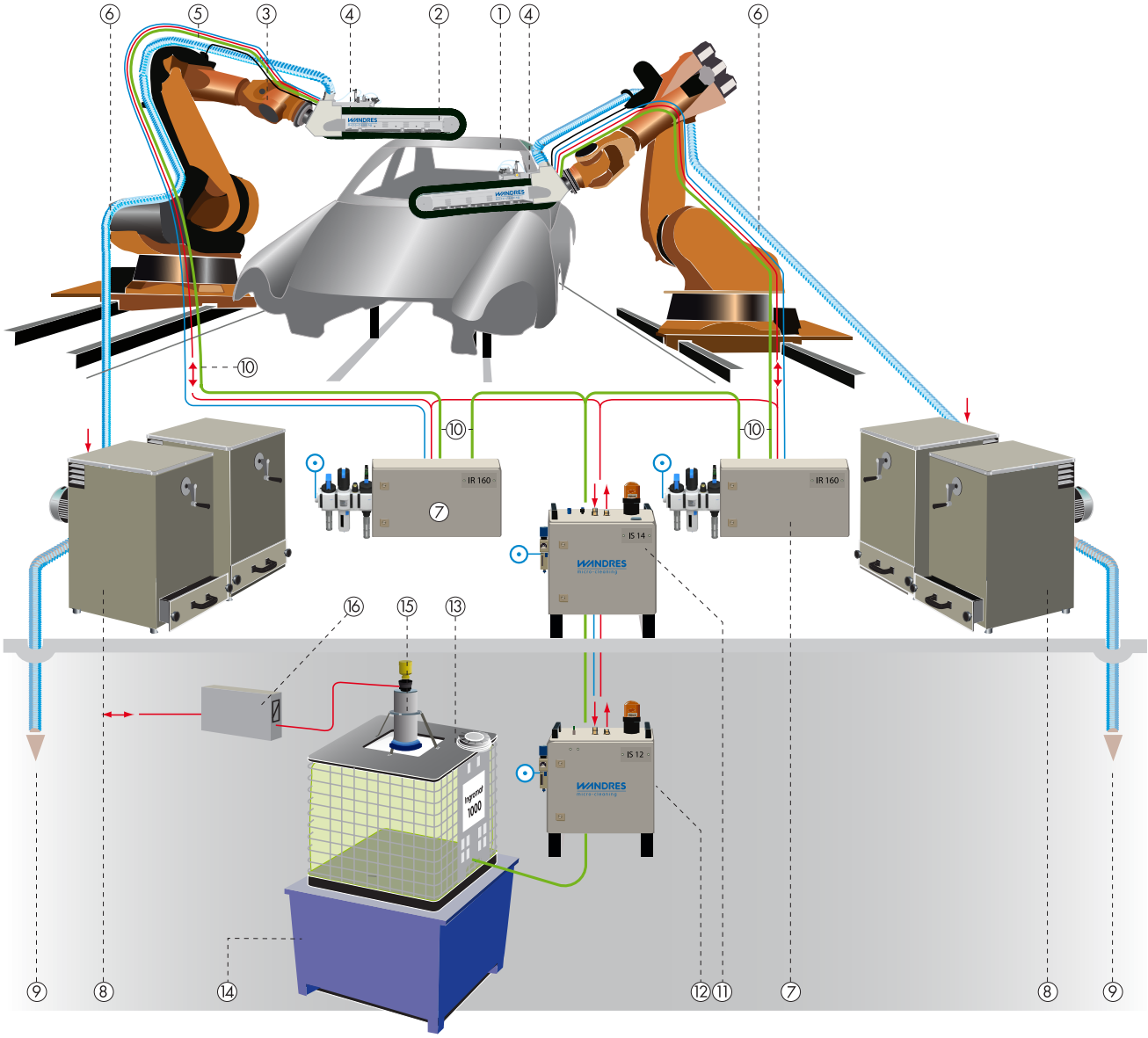


* P_{max} = maximum cleaning width
Values in mm



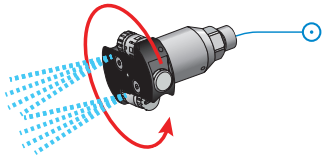
Typical system configuration

Laura 160/1M/1000 Order no. 1594-007



① Subject car body
② Robot Sword Brush
③ Cleaning robot
④ Motor control
⑤ Hose cable package
⑥ Suction hose
⑦ Ingromat® regulator and monitoring unit IR 160
⑧ Suction filter
⑨ Suction hose
⑩ Ingromat® hose
⑪ Ingromat® central supply pump IS 14
⑫ Ingromat® central supply pump IS 12
⑬ Ingromat® storage container 1000 litres
⑭ Collecting tray
⑮ Liquid level monitoring with ultrasonic sensor
⑯ Isolating module Vegatrenn

Tornado nozzle **Janus 50 D** for cyclical cleaning

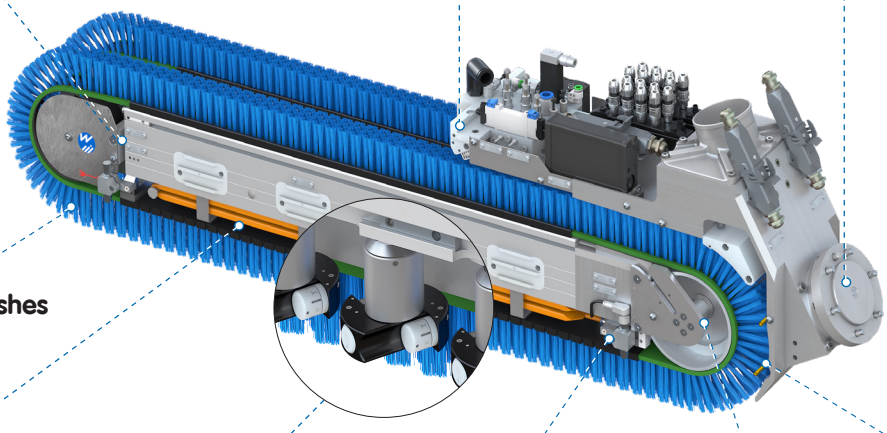


Compressed air
Electrical signals
Ingromat® anti-static cleaning agent

Pneumatic tensioning wheel

Ingromat® sprayer
to micro-moisten linear brushes

Robot flange
with quick change system



Two linear brushes
type Quadro L

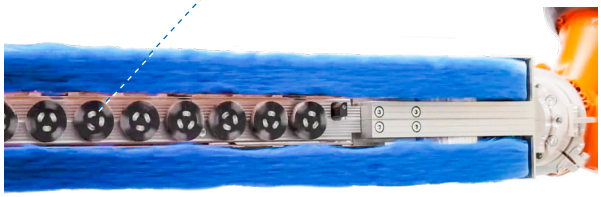
Flexible pressure buffer
flexible adjustment to wavy surfaces

Tornado nozzles Janus 50 D
with speed control

Proximity sensor
supervision of minimum distance to surface

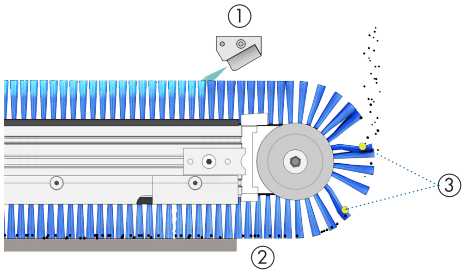
Hub drive

Self-cleaning mechanism
for linear brushes with adjustable scraper system



Compressed air assisted cleaning

Compressed air exits the Tornado nozzles of the Janus 50 D type with several times the speed of sound. This jet of air thoroughly removes any particles and dust debris from recesses, roof seams and grip recesses. The nozzle bore diameters are adjustable. Adjustment range is from 0 to 1.6 mm.

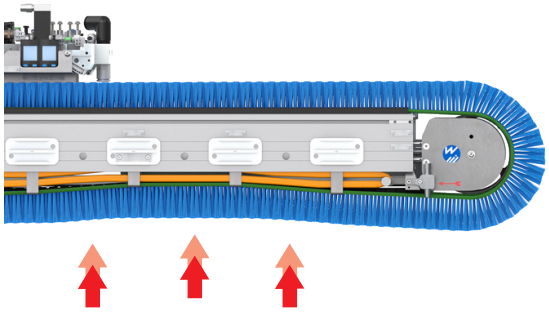


Ingromat® system

① Micro-moistening of brush filaments with antistatic cleaning agent Ingromat®

② Brush cleaning of product surface: Particles cling to brush filaments and are transported towards suction system

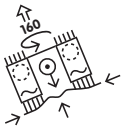
③ Mechanical self-cleaning of circulating linear brush: Particles are detached from brush filaments and eliminated by suction system



Flexible pressure buffer

The flexible pressure buffer is controlled pneumatically. The contact area of the linear brushes is mounted on this flexible device. Possible excursion of linear brushes at the centre of the flexible working area is -30 mm up to +10 mm . Brushes may thus adapt themselves effectively both to convex and concave surfaces.

Technical data	Laura 160..



Electrical details	
Drive of Laura 160..	Hub drive; IP 54; stabilised 10 A power supply unit necessary 48 V DC; 10 A; 0.35 kW
Sensor system	24 V DC; 4 A; 0.1 kW
Suction system	380-480V AC; 50/60 Hz; 5.1 kW
Pneumatic details	
Compressed air consumption	170 l/min (without Tornado nozzles Janus 50 D), 1560 l/min (with Tornado nozzles Janus 50 D)
Compressed air quality	filtered (particle size < 40µm), oil free (residual oil < 1.5 mg/m³ at 24° C)
Compressed air connection	6 bar; 1 x Ø 12 mm (Sword Brush); 1 x Ø 16 mm (Tornado nozzles Janus 50 D)
Suction	
Suction connection	1 x Ø 80 mm
Suction capacity	10 m³/min (at min. -1000 Pa LP measured at the suction connection of the Sword Brush)
Acoustic emission	
	Approx. 78 dB (A) without Tornado nozzles Janus 50 D, Approx. 90 dB (A) with Tornado nozzles Janus 50 D Acoustic emission depends on surface features and the dimensions of the subject surface.
Fluidics	
Ingromat® hose connection	1 x Ø 6 mm
Ingromat® consumption	0.4 – 1 l/h
Linear brush	
Type of linear brush	Quadro L with sanded and rounded filament tips
Filament material	Polyamide 6.12
Filament length BL	50 mm
Filament diameter G	0.2 mm
Features	plasma cleaned linear brush for delicate subsequent processes (lacquering, coating) Linear brushes are packed twice

Technical data are subject to change

Germany
Wandres GmbH micro-cleaning
Im Gewerbepark 8
D-79252 Stegen
Tel. +49 (0)7661-9330-0
sales@wandres.com
www.wandres.com

USA
Wandres Corporation
719 W. Ellsworth Rd., Suite 7
USA-Ann Arbor, MI 48108
Tel. +1-734-214-9903
sales@wandresusa.com

China
万喆清洁设备（上海）有限公司
Wandres Cleaning Machinery (Shanghai) Co., Ltd.
755B, Tower 3, No. 88 Keyuan Road
Pudong, Shanghai, China 201203
Tel. + 8621 68520069
china@wandres.com

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